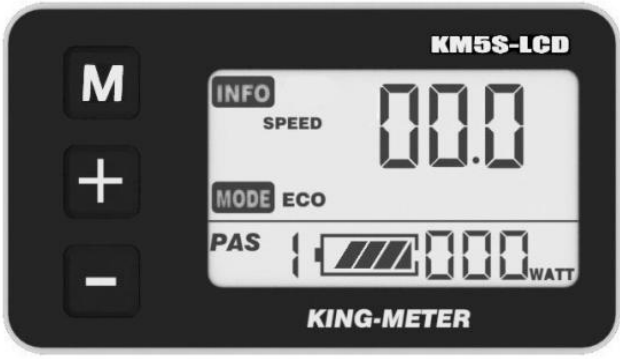
KING-METER

USERS GUIDE

KM5S–LCD



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About the User Manual

Dear users,

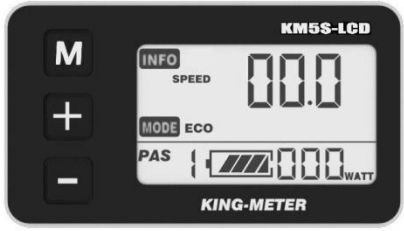
To ensure better performance of your e-bike, please read through the KM5S product introduction carefully before using. We will use the most concise words to inform you of all the details（including the hardware installation, setting and normal operation use of the display）when using our display. Meanwhile, the introduction will also help you to solve the possible confusion and malfunctions.

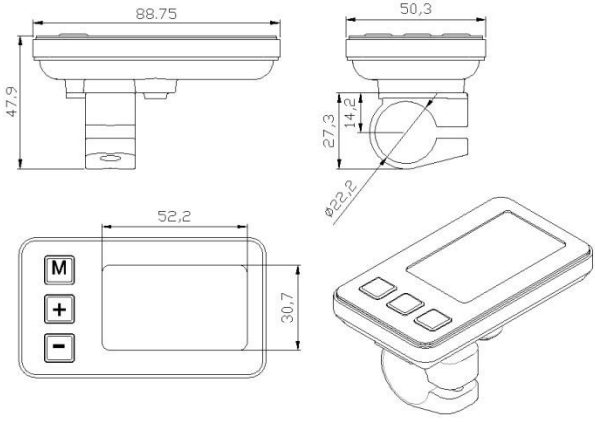
Appearance and Size

Material and Color

KM5S products are made of PC. Under the temperature of -20 to 60℃, the shell material can ensure normal usage and good mechanical performance.

Real product and dimension figure (unit: mm)





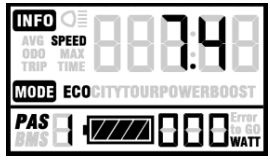
Function Summary and Button Definition

Function Summary

KM5S provides a wide range of functions and indicators to fit the users' needs. The indicated contents are as following.

- ◆Battery Indicator
- ◆Motor Power Ratio
- ◆Speed Display (including running speed, max speed and average speed)
- ◆Trip distance and total distance
- ◆Trip time display of single
- ◆Cruise control
- ◆Headlight On/Off
- ◆Error Code Indicator
- ◆Various Parameters Setting (like wheel size, speed -limited, battery level bar, PAS level, controller limited current, max speed, password enable, and so on.)
- ◆Recover Default Setting

Monitor Area



Monitor Area

Button Definition

KM5S has three buttons. They are . In the following introduction, is named as "**MODE**". is named as "**UP**" and is named as "**DOWN**".

Operation Cautions

Be care of the safety use. Don't attempt to release the connector when battery is on power.

Try to avoid hitting.

Don't split the waterproof sticker to avoid affecting the waterproof performance.

Don't modify system parameters to avoid parameters disorder.

Make the display repaired when error code appears.

Installation Instruction

Fix the display onto the handlebar and adjust to an appropriate visual angle. Tighten all the connectors.

Normal Operation

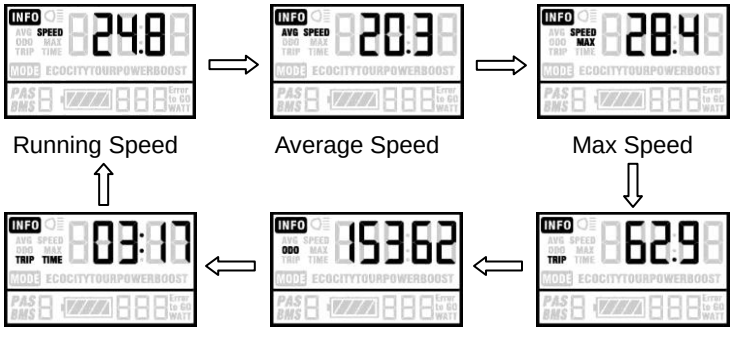
Power On/Off

Hold **Mode** button for 2 seconds then the display will power on, and the display will the power on the controller. With display on, hold **MODE** to turn off power supply of the e-bike. With the display off, the display and controller shut down. The leakage current is less than 1 uA.

When parking e-bike for more than 10 minutes, the display shut down automatically.

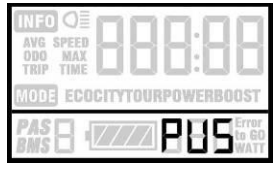
Display Interface

After starting up the display, default show is running speed. Press MODE to change the indicated information in sequence as below: Running Speed (Km/h) → Average Speed (Km/h) → Max Speed (Km/h) → Trip Distance (km) → Total Distance (km) → Travel Time → Running Speed (Km/h).



Push Cruise Control

Hold **DOWN** for 2 seconds to enter the mode of power assistant walk. The e-bike will go on at a uniform speed of 6 Km/h. PUS shows on the screen.



Push Cruise Control

"Push Cruise Control" function can only be used as pushing the e-bike by hands. Please don't use this function when riding.

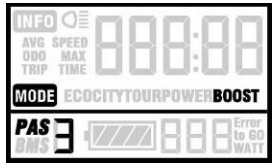
Turn on/off Backlight

Hold **UP** 2 seconds to turn on the backlight of the display, the headlight will be power on at the same time. Hold **UP** for 2 seconds again, backlight turned off.

Turn On/Off Backlight

PAS Level Selection

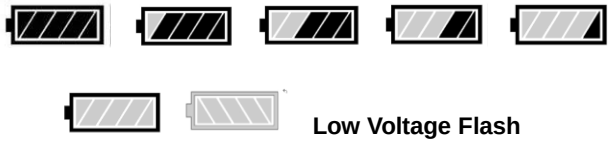
Hold **UP** or **DOWN** to change the output power of the motor. The power ranges from level 1 to level 5. Level 1 is the minimum power. Level 5 is the maximum power. The default value is level 1.



PAS Level

Battery Indicator

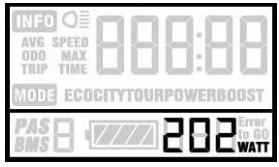
The 5 battery bars represent the capacity of the battery. When the battery is in low voltage, battery frame will flash to notice that the battery needs to be recharged immediately.



Battery Indicator

Motor Power Monitor

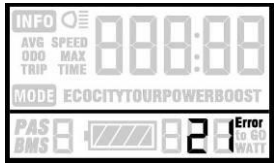
Motor power showed as below:



Motor Output Power

Error Code Information

If there is something wrong with the electronic control system, the error code will appear automatically. Here is the detail information of the error code in Table 1 attached.



Error Code

Make the display repaired when error code appears.

User Setting

Preparation before Starting

Make sure all connectors tightened and the cables without damage.

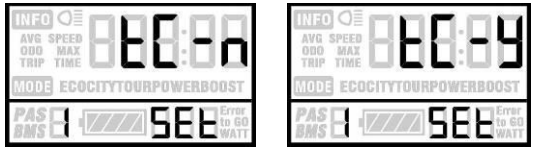
General Setting

Press **MODE** button to start the display, then hold both **UP** and **DOWN** for 2 seconds to enter the setting menu.

Trip Distance and Trip Time Clearance

TC means trip distance clearance. Press **UP** or **DOWN** to choose yes or no to clear the trip distance.

Trip distance and trip time will be cleared at the same time.

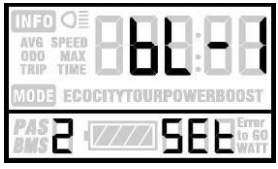


Trip Distance Clearance

Backlight Contrast

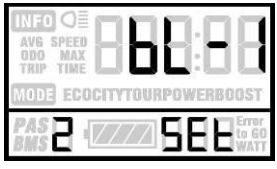
BL means backlight. Level 1 is the low brightness. Level 2 is the middle brightness. Level 3 is high brightness. The default level is 1. Bottom of the screen prompts SET2.

Press **UP** or **DOWN** to modify the backlight brightness. Hold **MODE** to confirm the modification and exit the general setting.



Backlight Brightness

Pressing **UP** and **DOWN** can change the backlight lighting. Long press **MODE** is to confirm and quit Setting Mode.



Backlight setting Interface

Power-on Password Enable/Disable

The character “-P-” on the bottom of the screen means the page of password. Hold **UP** and **DOWN** both up to 2 seconds enter normal setting , while hold both **UP** and

MODE 2 seconds again will enter power-on password enable/disable page.

Press **UP**/**DOWN** to change the number .Press **MODE** to select digit one by one. After 4-digite of the correct password entered, press **MODE** to confirm then select password enable or disable.

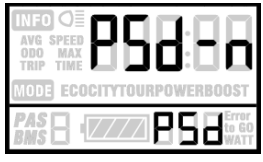
Password Entering Page

Power-on Password Enable

Press **UP**/**DOWN** to select **Y** or **N**, and press **MODE** to confirm. Power-on Password default disable.

y = Power-on Password Enable

n = Power-on Password Disable



Password Disable Page

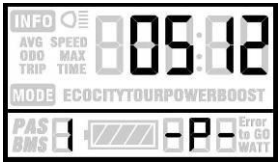
Power-on Password Modify

UP and **DOWN** is to change the number, and **MODE** is to select digit one by one, finally to hold **MODE** to confirm the modification.

Password Modify Page

Normal Parameter Setting

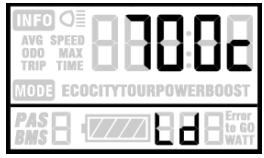
Hold both **UP** and **DOWN** for 2 seconds to enter User setting .But hold both **DOWN** and **MODE** over 2 seconds is to enter password 0512 to modify the wheel size.



Password Inputting Page

Wheel Diameter Setting

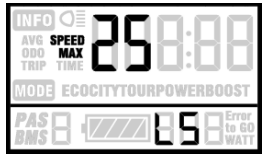
Press **UP** and **DOWN** to select the correct value to match the wheel diameter. Selectable values include: 16, 18, 20, 22, 24, 26, 700C, 28, 29. Default diameter is 26 inch. Ld means Wheel Diameter.



Wheel Diameter Setting Page

Speed-limit Setting

When the running speed is faster than MAX SPEED, the controller will cut off the motor power. MAX SPEED default setting is 25Km/h. LS means Limit Speed 12Km/h to 40Km/h is selectable. Press **UP**/**DOWN** to select the favorite value, then hold **MODE** over 2 seconds to confirm and quit the setting mode.



Limit Speed Setting Page

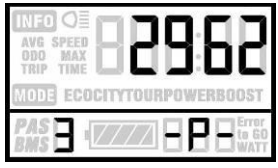
Personalized Parameter Setting

Personalized Parameter Setting can match variety requirements in use. Settings items are : Battery Power Bar Setting, Pedal assistant level Setting, Over-current Cut , Pedal Assistant Sensor Setting, Speed Sensor Setting and Delay Time Setting. For the details, please see the **Attached List 2**.

System Parameter Setting

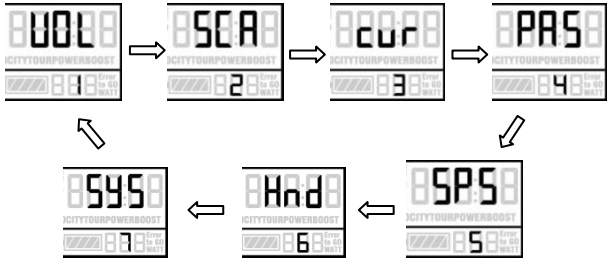
Hold **UP** and **DOWN** both over 2 seconds to enter normal setting, while hold **UP** and **DOWN** both again is to set up System Parameter, password 2962 must be entered.

MODE is to confirm and enter System Parameter Setting page, you can select the option which you want.



System Parameter Password Input

Press **UP/DOWN** to select, and press **MODE** to enter the corresponding setting page.



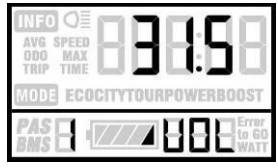
Option Select Page

Battery Power Bar Setting

Each bar represents a voltage value. 5 voltage values **MUST BE** entered one by one.

Press **MODE** to confirm and **UP/DOWN** to select the value.

VOL = voltage

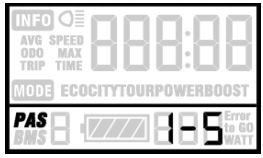


Battery Power Bar Setting

Pedal Assistant Level Setting

Pedal Assistant Level Select

In Pedal Assistant Level Setting , there are 8 modes to select ： 0-3, 1-3, 0-5, 1-5, 0-7, 1-7, 0-9, 1-9. Press **UP/DOWN** to select the mode, and press **MODE** to confirm, then change the ratio of each PAS level.



PAS Mode Select Page

0-3 or 1-3: **PAS1** also shows ECO, **PAS2** also shows TOUR, **PAS3** also shows BOOST.

0-5 or 1-5: **PAS1** also shows ECO, **PAS2** also shows CITY, **PAS3** also shows TOUR, **PAS4** also shows POWER, **PAS5** also shows BOOST.

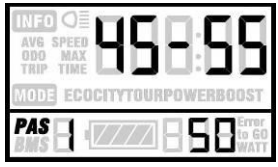
0-7 or 1-7: **PAS1** also shows ECO, **PAS2** also shows ECO, **PAS3** also shows CITY, **PAS4** also shows CITY, **PAS5** also shows TOUR, **PAS6** also shows POWER, **PAS7** also shows BOOST.

0-9 or 1-9: **PAS1** or **2** also shows ECO, **PAS3** or **4** also shows CITY, **PAS5** or **6** also shows TOUR, **PAS7** or **8** also shows POWER, **PAS9** also shows BOOST.

PAS Ratio Modify

To modify the value of PAS ratio will meet the different requirements.

Take the 1 level for example, “45-55 percent” is the range value, bottom value can be modified, and the default is 50 percent. **MODE** is used to confirm and turn to the next PAS ratio setting. After all PAS ratio inputted, please hold **MODE** over 2 seconds to confirm the modification and turn to controller Over-current Cut setting (**MODE** back to pedal assistant level select page). For the details, please see **Attached List 4.**

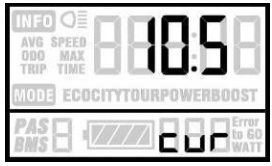


PAS Ratio Page

Controller Over-Current Cut Setting

CUR means current. CUR value can be changed from 7.0A to 22.0A. Press **UP/DOWN** is to change the value of the current, and hold **MODE** to confirm the setting and turn to PAS sensor setting.15A is the default value of controller over-current cut.

According to the different controller, the value might not be able to be 22A.

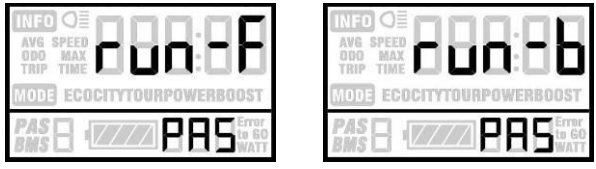


CUR Setting Page

Pedal Assistant Sensor Setting

The Direction of Pedal Assistant Sensor Setting

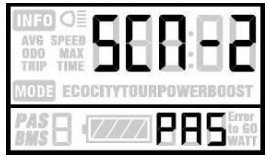
PAS means Pedal Assistant System. “run-F” means forward direction, while “run-b” means back direction. Press **UP/DOWN** to select F or b, and press **MODE** to confirm and turn to PAS sensitivity setting. The default direction is forward.



Direction of PAS Sensor Setting

The Sensitivity of PAS Setting

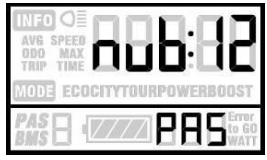
SCN means the sensitivity of PAS, and 2 to 9 can be selected.2 is strongest, 9 is the weakest. **UP/DOWN** is to select sensitivity value, and **MODE** is to confirm selection and turn to magnet disk setting. SCN default value is 2.



The Sensitivity of PAS Setting

Proportion parameters Setting Of PAS

N means the proportion parameter of PAS. Press **UP/DOWN** to select the parameter, the more power, the more PAS feeling.



Proportion parameter of PAS

Speed Sensor Selection

SPS means Speed Sensor. Press **UP/DOWN** to select the quantity of magnet head (the range is from 1 to 9), and press **MODE** to confirm and turn to Throttle Definition page. SPS default value is 1.

Speed Sensor Selection

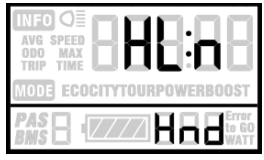
Throttle Definition

Throttle Enable/Disable

HL means throttle load, HL:N means function disable ,HL:Y means function enable .

When HL=Y, throttle can control the function. Press **UP/DOWN** to select Y, and press **MODE** to confirm the selection, otherwise select N to turn to Throttle Vector Enable Setting.

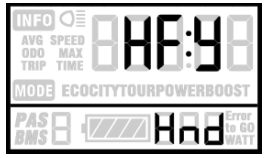
HL default value is N.



Throttle Enable/Disable Page

Throttle Level Enable/Disable

HND means throttle. **HF：Y** means throttle vector enable , **HF：N** means throttle vector disable. When **HF=Y**, turn throttle to change the running speed. Press **UP/DOWN** to select Y or N, and hold **MODE** to confirm the selection and quitting. Press **MODE** to confirm and turn to throttle definition page.

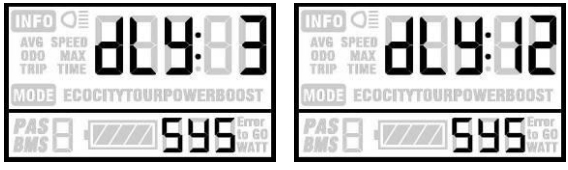


Throttle Level Enable/Disable Page

System Setting

Delay time setting of battery power

DLY means delay time of battery power. Choose delay time 3/6/12s through pressing **UP/DOWN,** then shortly press **MODE,** and enter the max speed limited**.** The default time is 3s.

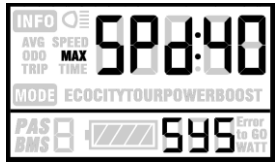


Delay time of battery power interface

Max speed limited

MAX SPD means max speed limited. Set the max speed when pressing **UP/DOWN** from 25-40 Km/h. Long time to press MODE, then exit setting. The default is 40Km/h.

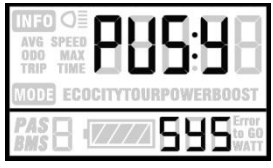
The standard speed limit setting is based on this setting, not more than this setting value.
This setting is the priority version



Interface of max speed limited setting

Button PAS Setting

PUS means pushing. Press **UP/DOWN** to choose Y/N. Short press MODE, Y means enable, N means disable. Short press MODE to confirm and enter into PAS speed setting. The default value is Y.

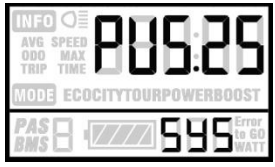


Interface of PAS pushing

PAS Speed Setting

Through setting PAS to adjust push speed to meet rider's requirements.

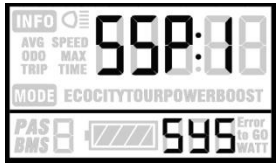
The scope is “20%-35%”by pressing **UP/DOWN,** short press **MODE** to enter into slowly start up. Default value is 25%.



Interface of PAS speed setting

Slowly Start up Setting

SSP means slowly start up. The scope is 1-4, 4 means the slowest. Press **UP/DOWN** to choose. Long press **MODE** to confirm and exit setting. The default value is 1.



Interface of slowly setting up

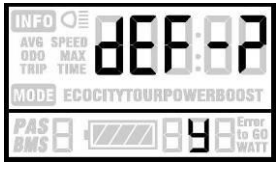
Exit setting

In the setting state, short press MODE (less than 2s) is to confirm the input. Long press MODE (more than 2s) is for saving the setting, then quit the setting state. Long press DOWN (more than 2s), is to cancel the operating but not saving setting data.

If there is not any operating in one minute, display will exit the setting state.

Recover default setting

DEF means recover default. Both press **UP+MODE** to enter recover default setting**.** Pressing **UP**, **DOWN** to convert Y or N. N means do not need to recover default setting; Y means entering into password setting. Otherwise, display will exit. The default state is N.

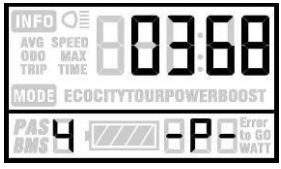


Restore Default Setting Interface

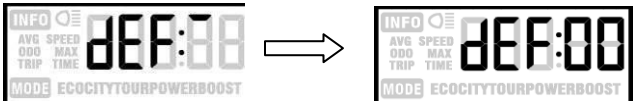
Input password: 0368. Short press **MODE**, **UP**/**DOWN** can increase or reduce the number. After inputting 4

passwords, short press **MODE** to confirm. The interface is as below. When display showed DEF:00, it means recovering default state, then exiting.

In the recovery default, battery power, ODO and trip cannot be recovered, but starting up password can be recovered.



Input recovery password interface



Start Complete

Recover default interface

FAQ

Q: Why the display is not able to start up?
A: Check the connector between display and controller.
Q: How to deal with the error code?
A: Fix it to the maintenance place immediately.

Barcode

The barcode is built up as follows:

KM5S=Name
000001=Sequence No.
12=Year of Production
06=Week of Production
3=Battery Voltage
1=sample（0=mass production）
01=hardware version No.
801=software version No.

Quality assurance and warranty scope

Ⅰ、Warranty

1、Any quality problems in normal case and during guarantee period, our company will be responsible for the warranty.

2、The warranty time is 24 months when display out of the factory.

Ⅱ、Other items

The following items do not belong to our warranty scope.

1、It can not be demolished.

2、The damage is caused by wrong installation or operation.

3、Shell is broken when display is out of the factory.

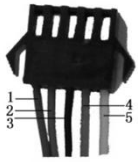
4、Wire is broken.

5、The fault or damage is caused by the force majeure (such as fire, earthquake, etc,) or natural disasters like lighting, etc.

6、Beyond Warranty period.

Connection layout

Connector line sequence



Display-side Connector Display-side adapter Switch wiring

Line sequence table

Line sequence	Color	Function
1	Red（VCC）	+
2	Blue(K)	Lock
3	Black(GND)	-
4	Green(RX)	RX
5	Yellow(TX)	TX

Some wire use the water-proof connector, users are not able to see the inside color.

Version changes

This operating instruction is a general-purpose version （V1.0）. Some of the version for the display software will be different from the specification, which should depend on the actual use version.

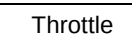
Attached list 1：Error code definition

Error Code	Definition
21	Current Abnormality
22	Throttle Abnormality
23	Motor Abnormality
24	Motor Hall Signal Abnormality
25	Brake Abnormality
30	Communication Abnormality

Attached list 2： Password table

No	OSD	Password	Setting
1		0512	Using parameter setting password(settled)
2		**Default** 1234	Starting up password
3		2962	Personality setting password(settled)
4		0368	Recovery setting password(settled)

Attached list 3：Personality Parameter setting

No	Setting	Display	Details
1	Battery power		Five battery power value
2	Assistance		Power assist level option
			Assistance proportion
3	Current-limiting		Limit current
4	Power assist sensor		PAS direction
			PAS sensitivity
			PAS magnet No
5	Speed sensor		Speed sensor magnet No
6	Throttle		Throttle-changing 
			Throttle

Continue list 3：

No	Items	Display	Setting
7	System setting		Time of battery power delay
			Max speed

Attached list 4：Power assist table

Level / Item	1	2	3	4	5	6	7	8	9
0-3/ 1-3	50%	74%	92%	—	—	—	—	—	—
0-5/ 1-5	50%	61%	73%	85%	96%	—	—	—	—
0-7/ 1-7	40%	50%	60%	70%	80%	90%	96%	—	—
0-9/ 1-9	25%	34%	43%	52%	61%	70%	79%	88%	96%

Attached list 5：symbol definition

No	Symbol	Definition
1		Setting
2		Password
3		Power delayed time
4		Recover default
5		Trip and time to clear
6		Backlight
7		Throttle-changing
8		Throttle power assist walk
9		Speed limit
10		Wheel diameter
11		Question mark
12		Backward
13		Forward
14		Yes
15		No